

We Claim:

1. A process for solubilizing amphiphilic drugs for use in the preparation of liposomes, comprising:

a) acidifying a phospholipid in a small quantity of organic solvent;

b) adding said amphiphilic drug to said organic solvent; and

c) forming a soluble complex between said acidified phospholipid and said amphiphilic drug.

2. The process of claim 1, wherein said phospholipid is a phosphatidylglycerol selected from the group consisting of distearoylphosphatidylglycerol, dilaurylphosphatidylglycerol, and dimyristoylphosphatidylglycerol; and the amphiphilic drug is a polyene antibiotic selected from the group consisting of tetraenes, pentaenes, hexaenes, and heptaenes.

3. The process of claim 2 wherein additional lipids and/or sterols are in the solution of acidified volatile organic solvent with said complex.

4. The process of claim 3 wherein said additional lipids and sterols are comprised of phosphatidylcholine and cholesterol.

5. The process of claim 4 wherein said additional phosphatidylcholine is hydrogenated egg phosphatidylcholine, hydrogenated soybean phosphatidylcholine, distearoyl phosphatidylcholine, dipalmitoyl phosphatidylcholine, or a combination thereof.

6. The process of claims 2, 3, 4 or 5, wherein said organic solvent is a solution comprising methanol and chloroform in a ratio of from 1:1 to 2:1 and said phosphatidylglycerol is in a molar ratio with said polyene of from 0.5 to 4.0.

7. The process of claim 6 wherein the components are Amphotericin B, distearylphosphatidylglycerol, hydrogenated egg phosphatidylcholine, and cholesterol in the molar ratio of 0.4: 0.8: 2.0: 1.0.

8. The process of claim 6, wherein said polyene antibiotic is Amphotericin B.

9. The process of any of claims 1 through 8 in which said soluble complex is subsequently formed into liposomes.

10. The process of claims 1-8 in which said phospholipid is acidified in an organic solvent having a pH between about 1.0 and 3.0.

11. The process of claim 9 in which said solubilized liposomes are lyophilized for storage and later reconstitution.

12. The process of claim 11 in which said lyophilized liposomes are hydrated with an aqueous buffer to provide a solution with a final pH of about 4.5 to about 5.5

13. The soluble complex made by the process of claims 1, 2, 3, 4, 5, 6, 7, or 8.

14. A method for treating disseminated fungal infection comprising administering a fungicidally effective dose of Amphotericin B encapsulated liposomes prepared by the process of claims 8, 9, 10, 11 or 12.

15. A therapeutic formulation for treating disseminated fungal infections comprising a polyene antibiotic encapsulated within a liposome, said liposome comprising phosphatidylcholine, a sterol, and a soluble complex of said polyene and phosphatidylglycerol and in an aqueous solution having a pH between about 2.0 and 5.5.

16. The formulation of claim 15 in which said aqueous solution has a pH between about 4.5 and 5.5 and said polyene is Amphotericin B.

17. The formulation of claim 15 or 16 in which said phosphatidylglycerol is selected from the group consisting of distearoylphosphatidylglycerol, dilaurylphosphatidylglycerol, and dimyristoylphosphatidylglycerol.

18. The formulation of claim 15 or 16 in which said phosphatidylcholine is selected from the group consisting of hydrogenated egg phosphatidylcholine, hydrogenated soybean phosphatidylcholine, distearoyl phosphatidylcholine, or dipalmitoyl phosphatidylcholine, and wherein said sterol is cholesterol, ergosterol, stigmasterol, or androsterone.

19. The formulation of claim 15 or 16 wherein the components are Amphotericin B, distearylphosphatidylglycerol,

hydrogenated egg or soybean phosphatidylcholine, and cholesterol in the molar ratio of 0.4: 0.8: 2.0: 1.0.

20. The formulation of claim 18 in which the molar ratio of said sterol to said phosphatidyl choline is about 1:4 to 1:1.

21. The formulation of claim 20 in which said sterol is cholesterol.

22. The formulation of claim 15 or 16 in which the molar ratio of phosphatidyl glycerol to polyene is 0.5:1 to 4:1 and the molar ratio of phosphatidylglycerol to sterol is 1:1 to 4:1.